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INTELLIGENCE MEMORANDUM

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AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM

DIRECTORATE OF INTELLIGENCE

JCS review
completed.

DOJ Review
Completed.

DIA review(s)
completed.

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
21 January 1966

INTELLIGENCE MEMORANDUM

An Appraisal of the Bombing
of North Vietnam*

Summary

The North Vietnamese economy continues to limp along, perhaps with less difficulty than before. Distribution of imports and internal traffic have achieved sufficient flexibility to partially ease the distribution problems. The viability of the economy will probably be enhanced by recent extensions of Bloc assistance. The transport system probably carried as much tonnage during 1965 as it did during 1964. In the southern DRV, increasing quantities of supplies are being moved in spite of transportation difficulties. There continues to be no indication of any significant decline in North Vietnamese morale. Intelligence indicates that the training and infiltration of personnel into South Vietnam has continued during the pause in US airstrikes.

Effects on the DRV Economy

1. Prior to the current lull, the concentration of the most recent US/GVN airstrikes against transportation targets and a large electric power plant in

*This memorandum is CIA's issuance of a joint CIA-DIA Study prepared periodically to assess the effects of US bombing of North Vietnam.

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northeastern North Vietnam did not add appreciably to the economic disruption caused by past strikes. The economy continues to limp along, perhaps with less difficulty than before. By 24 December, when US/GVN air operations ceased, the DRV had achieved sufficient flexibility in the routing of both imports and internal traffic to ease in part the distribution problems that had developed during the first few months of the strikes. The disruptions of production and construction activity, even those noted in the more economically important areas of the country, have probably been minimized by relatively quick repair of key transportation targets, by the diversion to sea transport of some imports previously delivered by rail, and by greater utilization of the reserve capacity of the six remaining electric power plants in the main power grid. Almost certainly, the DRV is taking advantage of the bombing pause to accelerate recovery efforts. Nevertheless, difficulties in allocation of manpower, managerial inefficiencies, and distribution problems aggravated by the airstrikes continue to hamper reconstruction efforts, disrupt exports, and reduce industrial performance in some sectors. These do not appear, however, to be at a scale sufficient to cripple the economy or to reduce its ability to supply the Communist forces in South Vietnam and Laos.

2. Moreover, the viability of the North Vietnamese economy will probably be enhanced by the recent extensions of new economic assistance by the USSR, Communist China, Hungary, East Germany, and Rumania. Currently announced agreements, prior to Shelepin's visit to Hanoi, provide for an economic grant and a credit to balance the clearing account for 1965 from the USSR; postponement of scheduled repayments on previous loans from the USSR, Hungary, and Rumania; and additional loans from Communist China, Hungary, and Rumania. This assistance will undoubtedly permit further increases in imports to cover domestic shortages and will eliminate any immediate balance of payments problems resulting from reduced exports.

the effect
of increased Communist support has been apparent in
the continuation of work on major economic development

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projects and in the undertaking of several additional projects despite intensified bombing.

3. Direct losses caused by bomb damage to economic facilities and equipment are now estimated at approximately \$28.4 million, as indicated in the following tabulation:

	<u>Million US \$</u>
Railroad and highway bridges	
Reconstruction	10.5
Temporary repairs	1.1
Transport equipment	6.0
Electric power plants	9.5
Petroleum storage facilities	0.5
Nam Dinh textile mill	<u>0.8</u>
Total	28.4

Measurable indirect losses amount to between \$9 million and \$10 million, made up principally of losses of foreign exchange earnings of \$6.1 million and losses in the fall rice crops of \$3.5 million. The measurable direct costs of reconstruction, replacement, and repair of damaged facilities, if attempted, would represent more than a quarter of total gross annual investment in industry.

4. The most important economic target destroyed by recent strikes was the Uong Bi thermal power plant, which had an installed generating capacity of 24,000 kilowatts (kw) and a planned capacity of 48,000 kw. This plant was the sixth power plant put out of operation as a result of the airstrikes. Loss of electric generating capacity now amounts to 47,000 kw, about 27 percent of total national generating capacity. The minimum period that the plant will be out of operation is estimated to be six months, with complete restoration requiring from 1.5 to 2 years and costing at least

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\$5 million. Loss of the Uong Bi plant has deprived North Vietnam of one of the largest and most economical producers of power in the country.*

5. The transport system of North Vietnam probably carried as much tonnage during 1965 as it did during 1964. The interruptions on certain rail lines, however, undoubtedly resulted in a considerably lower performance in terms of ton-kilometers. In spite of continued interdiction of transport routes, there was at the end of the year less evidence of shortages of transportation than in earlier months. The North Vietnamese are now becoming more experienced and resourceful in meeting the emergencies created by the bombing. They have had the time and the outside assistance to organize transportation and repair activities more adequately, and to establish alternate means of transportation. The truck inventory has been increased and numerous items of road construction equipment, such as scrapers, excavators, tractors, and bulldozers, have been received. Soviet assistance to the damaged North Vietnamese railroad system in December included a shipment of several thousand tons of rails and rail joints.

6. Despite attacks on the two JCS-targetted bridges on the Hanoi-Haiphong railroad line, the damage caused is believed to have been superficial and the line remains open. Through rail traffic on the Hanoi - Dong Dang line, however, was disrupted during most of December, but by now has probably been resumed. During the period this line was interdicted, a rail and truck shuttle service to circumvent the destroyed bridges almost certainly was used to move some high-priority traffic on this route. In addition,

*CIA would point out, however, that most of Haiphong's industrial requirements for power and all of Hanoi's industrial requirements probably can be supplied by increased utilization of existing generating capacity in other power plants joined to the main power network.

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some freight, such as coking coal from China and petroleum from the USSR, was probably shifted to sea transportation. During 1965, an estimated 300,000 metric tons (mt) of economic and military supplies were imported by the North Vietnamese over this line and 150,000 mt were exported, compared with imports of 150,000 mt and exports of 200,000 mt in 1964. Of particular interest is a rail line under construction from the Thai Nguyen area to the vicinity of Kep. This line, of which construction earth scars were confirmed [redacted]

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[redacted] would be about 30 miles long when completed and would shorten the rail distance considerably between Dong Dang and the Thai Nguyen iron and steel complex. Analysis of aerial photography [redacted]

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[redacted] confirmed that the Hanoi - Lao Cai railroad line was opened to through traffic. The export of apatite did not resume in December, however, but there are now indications that it may be resumed in the near future. There has been as yet no evidence of the movement of Chinese transit traffic on the Lao Cai line. Although through traffic on the Hanoi-Vinh railroad line is not possible, rail traffic is probably being moved on a large segment of this route.

7. In the southern part of North Vietnam, increasing quantities of supplies apparently are being moved in spite of transport difficulties. According to a North Vietnamese Army publication, the volume of commodities shipped to and from each of the three southernmost provinces had reached 80 percent of the normal volume by mid-November. Military authorities appear to be assuming direct control of transport in the southern area in an effort to overcome organization problems and inefficiencies. In spite of heavy damage to bridges, substantial amounts of both economic and military traffic continue to be hauled by motor truck and on a makeshift rail line south of Vinh. The movement of all types of traffic on the coastal and inland waterways also appears heavy. The increased distribution of petroleum into the southern provinces of North Vietnam reflects an attempt to meet both local needs and the requirements for support of the infiltration effort into Laos and South Vietnam. The Communists have continued to move supplies by truck on Route 15 to the border of Laos and on routes in Laos in spite of air attacks. These supplies apparently

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are moved through Mu Gia Pass on Route 12 as well as on at least one new road that bypasses bombed sections of Route 12 near the border. In December, for the first time, tank trucks were observed moving on the Laotian supply route between North and South Vietnam.

8. The total seaborne trade of North Vietnam in 1965 was slightly greater than in 1964, with both exports and imports showing an increase. In December 1965, identified seaborne imports reached their highest total for the year. No apatite was exported by sea in December and exports of cement and pig iron were well below previous monthly totals. The reason for the decline in exports of pig iron is not known, but exports of cement almost certainly have been reduced in order to meet increased internal requirements, particularly for military construction and for the repair of bomb-damaged structures.

9. The US/GVN airstrikes have caused only limited direct damage to agriculture in North Vietnam. The fall rice crop, normally about two thirds of the annual harvest, probably amounted to about 2.7 to 2.8 million mt, or nearly 200,000 mt below the average for the last six years. This would be equivalent to about \$20 million worth of rice at local retail prices. Only a small part of this shortfall is attributable to the bombing attacks, which have caused a loss of some power sources for irrigation and some labor shortages. Natural causes, such as flooding, drought, and insect damage, are responsible for most of the shortfall. Although total rice production of 4.5 million mt for 1965 is about 200,000 mt more than the total for 1964, it is insufficient to give more than a temporary respite to the tight food situation throughout the country.

Political and Public Reactions

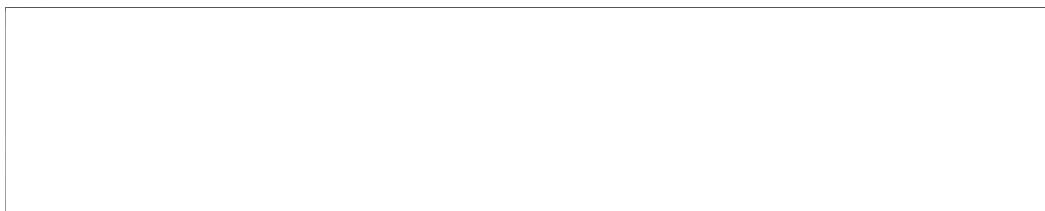
10. There continues to be no indication of any significant decline in North Vietnamese morale.

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borne out by DRV propaganda and public statements surrounding the current US peace moves. Hanoi's pronouncements on these US efforts reflected a tough and unyielding position, indicating that it has no intention at present of modifying its own terms to meet the US call for "unconditional discussions," and that it is willing to face a resumption of the bombings. In fact, a 2 January commentary in the army's daily paper, in attempting to explain the lull in the bombing to the DRV populace, appeared as a warning to them that the airstrikes will probably be started again. At one point, the commentary declared that the "Americans will intensify the war and bomb more fiercely." Hanoi appears confident, however, that it can withstand renewed US aerial attack.

12. This confidence exuded from a year-end article in the party theoretical journal Hoc Tap, which summed up 1965 as a year of "great victories" and appeared as a pep talk for the populace in general. The article claimed that in spite of the US air attacks, the crops were "rather good" and that the volume of food in 1965 was "notably greater than in 1964." It asserted that in the industrial field, total production increased and that "regional industry is soaring."

Effects on Military Targets

13. Prior to the pause in the air offensive on 24 December, the level of US activity slackened slightly but the pattern was not altered. The weight of the effort was placed on armed reconnaissance, with airstrikes on JCS-designated targets confined to the Uong Bi thermal plant and six railroad or highway bridges. The disruption of electrical power occasioned by the attacks on the thermal plant and the damage caused by attacks on the railroad and highway bridges produced little adverse short- or long-range effect on the military.

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14. Armed reconnaissance activity was mainly directed against lines of communication and targets of opportunity. The balance of this effort was divided between neutralizing targets previously attacked and attacking SA-2 sites, suspected sites, and support facilities. Attempts at neutralizing targets previously attacked concentrated on radar sites, a ferry landing, and barracks areas. Adverse weather or darkness precluded bomb damage assessment of these missions. The attacks on SA-2 and suspected SA-2 sites inflicted damage, but there was no evidence of SA-2 equipment at any of these facilities.

15. Since the cessation of ROLLING THUNDER, intelligence information does not indicate any significant change in established patterns of Communist military activity relating to the infiltration of personnel and materiel into South Vietnam. Available intelligence indicates the continuation of infiltration and training activities and of lines of communication construction and repair. Vehicular movement during daylight hours is apparently now authorized in North Vietnam. This increased freedom of activity will permit an increased volume of personnel and materiel to flow toward Laos and South Vietnam, as well as facilitating the correction of any logistics shortcomings that may exist, particularly within the southern portion of North Vietnam.

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RESULTS OF STRIKES ON DRV TARGETS a/ THROUGH FRIDAY, 24 DECEMBER 1965

FIXED TARGETS	TARGETS STRUCK			STRIKE SORTIES	% OF NAT'L CAPACITY DESTROYED - INACTIVE
	NO.	% b/	NO. AT-TACKS		
BARRACKS	44	24.95	173	2530	14.65 3.37
AMMO DEPOTS	13	84.31	51	1108	34.16 34.64
POL STORAGE	4	19.0	7	90	16.7 .50
SUPPLY DEPOTS	18	19.3	43	528	9.36 1.81
POWER PLANTS	6	27.5	19	210	27.5
MARITIME PORTS	4	12.	9	157	5.7
RR YARDS	1	7.0	5	75	5.25
EXPLOSIVE PLANT	1	100	3	28	71
AIRFIELDS	4		9	268	Runways cratered, 25% buildings destroyed at airfields attacked.
NAVAL BASES	2		10	136	45% buildings destroyed at bases attacked.
BRIDGES	42		93 ^{d/}	1917	39 not usable.
IMO INSTALL	2		2	15	2 destroyed.
RADAR SITES	13		52 ^{d/}	366	3 destroyed, 6 damaged 4 redeployed prior to attack.
SAM SITES	23		28	229	11 possibly damaged, 3 not observed, 1 destroyed.
LOCKS & DAMS	1		1	2	1 destroyed.
(Dropped from Tgt list)					RESULTS e/
<u>FERRIES</u>	<u>11</u>		<u>7^{d/}</u>	<u>44</u>	Vessels <u>477</u> Destroyed Damaged <u>853</u>
TOTAL SORTIES					
AGAINST FIXED TARGETS: 7703					
ARMED RECCE SORTIES: 16466					
TOTAL OF ALL SORTIES EXCEPT SUPPORT: 24169					
Vehicles 483 565					
RR Stock 236 604					

- a/ Assessments are based on best information received, and will be refined as more accurate information becomes available.
- b/ Percentages of national capacity where appropriate.
- c/ Strike plus flak suppression sorties.
- d/ Also numerous attacks during armed recce and other missions.
- e/ Also numerous installations, AA sites, bridges, etc., attacked and road and rail cuts made.

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